

REMARKS/ARGUMENTS

The claims are 1-4, 7-17 and 20-22. Claim 1 has been amended to improve its form and to incorporate subject matter previously appearing in claims 5 and 6. Accordingly, claims 5 and 6 have been canceled. Claim 14 has been amended to improve its form and to incorporate subject matter previously appearing in claims 18 and 19. Accordingly, claims 18 and 19 have been canceled. Claims 2-4, 7, 9-13, 15-17 and 20-22 have also been amended to improve their form. In addition, claim 11 has been amended to depend on claim 7. The title has also been amended. Reconsideration is expressly requested.

The title of the invention was objected to as not being descriptive. In response, Applicant has amended the title to read --WELDING UNIT AND WELDING PROCESS COMBINING A COLD-METAL TRANSFER WELDING PROCESS AND ANOTHER WELDING PROCESS--, which it is respectively submitted overcomes the Examiner's objection to the title.

Claim 17 was objected to as containing a misspelling and claims 1-22 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for the reasons set forth on pages 1-4 of the Office Action. In addition, claims 14-22 were rejected under 35 U.S.C. 101 as failing to set forth the steps involved in the claimed processes.

In response, Applicant has, *inter alia*, amended claims 1, 5, 7, 9, 11-14, 17 and 20-22 to improve their form, which it is respectfully submitted overcomes the Examiner's rejection under 35 U.S.C. 112, second paragraph, 35 U.S.C. 101, and the objection set forth in the Office Action.

Claims 1, 5-14, 18 and 20-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Ditschun et al. U.S. Patent No. 4,806,735* in view of *Forrest et al. U.S. Patent Application Publication No. 2002/0148113*. The remaining claims were rejected under 35 U.S.C. 103(a) as being unpatentable over *Ditschun et al. and Forrest et al.* in view of *Brunner et al. U.S. Patent No. 6,570,132* (claims 2 and 15-16) or *Trube et al. U.S. Patent No. 6,570,132* (claims 2 and 15-16) or *Trube et al. U.S. Patent No. 6,570,132* (claims 2 and 15-16).

6,469,277 (claims 3-4, 10, 17 and 19).

In response, Applicant has amended claims 1 and 14 to further define the invention and respectfully traverses the Examiner's rejection for the following reasons.

As set forth in claim 1 as amended, Applicant's invention provides a welding unit including a welding apparatus with a welding torch unit connectable thereto via a hose pack. At least one control device and a welding current source are arranged in the welding apparatus.

As recited in claim 1 as amended, the welding torch unit is formed by at least first and second separate welding torches, wherein the first welding torch has a first welding wire and is configured to carry out a first cold-metal transfer welding process and the second welding torch has a second welding wire and is configured to carry out a second cold-metal transfer welding process with a forward-backward movement of the second

welding wire. A device for synchronizing the first and second welding processes carried out by the first and second welding torches is also provided. Alternatively, the first welding torch includes a laser unit which, in the welding torch unit, is combined with the second welding torch for the cold-metal transfer welding process.

As set forth in claim 14 as amended, Applicant's invention provides a welding method in which a first welding process and a second welding process are carried out, and the first and second welding processes are synchronized in time.

The first welding process includes a cold-metal transfer welding process, wherein a consumable welding wire is moved forward and backward. The second welding process includes a cold metal transfer process or a laser welding process.

In this way, Applicant's invention provides a welding unit and a welding method using a combination of two welding torches,

both being configured to carry out a cold-metal transfer welding process, or a combination of two welding torches wherein one welding torch is configured to carry out a cold-metal transfer welding process and the other welding torch includes a laser unit. By using such combined welding torches or welding processes, the energy and heat input can be reduced such that only little additional heat is introduced into the workpiece or sheet metals. Moreover, the gap bridging ability is substantially enhanced. Due to the time synchronization of the welding processes, these processes can be optimally tuned to one another, thus allowing for optimum adjustment of the heat or energy input into the workpiece. In addition, different welding wire materials and welding wire diameters can be used while enabling the control of the material input into the work piece.

As recognized by the Examiner, the primary reference to *Ditschun et al.* fails to disclose or suggest a welding unit and a welding method configured to carry out a cold-metal transfer welding process wherein the welding wire is moved forward and backward. The defects and deficiencies of the primary reference

are nowhere remedied by the secondary reference to *Forrest et al.* which discloses a transfer of patterned metal by cold welding which differs from the cold-metal transfer welding process as recited in Applicant's claims 1 and 14 as amended. With Applicant's cold-metal transfer welding process as recited in claims 1 and 14 as amended, a forward-backward movement of the welding wire and corresponding courses of the welding current occurs as described in Applicant's disclosure at page 8, first paragraph.

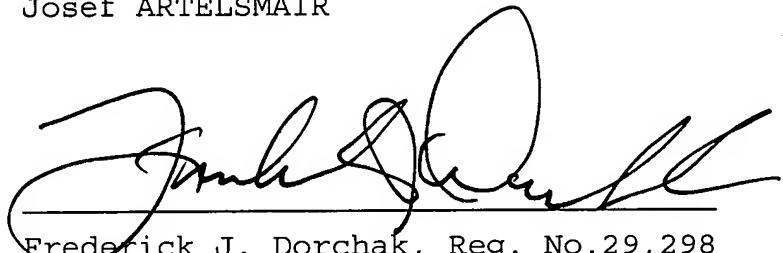
The remaining references to *Brunner et al.* and *Trube et al.*, cited with respect to certain dependent claims, have been considered but are believed to be no more relevant. There is no disclosure or suggestion in either *Brunner et al.* or *Trube et al.* of a welding unit having the specific structure set forth in claim 1 as amended or a welding method having the specific process steps set forth in claim 14 as amended, including a combination of two welding torches, both being configured to carry out a cold-metal transfer welding process, or the combination of two welding torches wherein one welding torch is

configured to carry out a cold-metal transfer welding process and the other welding torch includes a laser unit as recited in Applicant's claims.

Accordingly, it is respectfully submitted that claims 1 and 14 as amended, together with claims 2-4 and 7-13, which depend directly or indirectly on claim 1 as amended, and claims 15-17 and 20-22, which depend on claim 14 as amended, are patentable over the cited references.

In summary, claims 1-4, 7, 9-17 and 20-22 have been amended, and claims 5, 6, 18 and 19 have been canceled. The title has also been amended. In view of the foregoing, it is respectfully requested that the claims be allowed and that this application be passed to issue.

Respectfully submitted,  
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Amy Klein

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